

# METHOD AND APPARATUS FOR COOLING A RESONATOR OF A MEGASONIC TRANSDUCER

## ABSTRACT OF THE DISCLOSURE

A method for cleaning a semiconductor substrate with a sonic cleaner is provided. The method initiates by introducing a cooling fluid into an inner jacket region of a sonic cleaner to cool a sonic resonator positioned within the inner jacket region. Then, a cleaning agent is introduced into an outer jacket region of the sonic cleaner to clean a semiconductor substrate. Next, a cooling fluid/cleaning agent interface is defined at an orifice located between the inner jacket region and the outer jacket region. Then, sonic energy from the resonator is transmitted to the cleaning agent through the interface at the orifice. Next, the cleaning agent is applied to the semiconductor substrate.